Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	
and Their Impact upon the Existing	)	MM Docket No. 87-268
Television Broadcast Service	)	

MEMORANDUM OPINION AND ORDER ON RECONSIDERATION OF THE SIXTH REPORT AND ORDER

Adopted: February 17, 1998 ; Released: February 23, 1998

By the Commission: Commissioner Ness issuing a separate statement; Commissioner Furchtgott-Roth dissenting in part and issuing a statement.

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I. INTRODUCTION

1. In this Memorandum Opinion and Order, the Commission addresses the petitions for reconsideration of the Sixth Report and Order in this proceeding.[1] In that action, we adopted a Table of Allotments for digital television (DTV),[2] policies and rules for the initial DTV allotments, procedures for assigning those allotted channels,[3] and plans for spectrum recovery. We received 231 petitions requesting reconsideration of various aspects of this decision.[4]

2. With this action, we complete the final steps in our plan for the implementation of DTV service.[5] After a long and cooperative effort by industry and this Commission, all of the elements necessary for broadcasters and related industries to begin the conversion from the existing analog television technology to the new digital technology are now in place. The Commission has adopted a DTV transmission standard, service and application rules, channel allotments/assignments, and technical parameters for station operation. Broadcasters now have the administrative and technical certainty they need to proceed with this historic change. In accordance with this plan, broadcasters are preparing to construct and operate their DTV facilities and consumer equipment manufacturers will soon market the first generation of the new DTV receivers and related devices.

3. With the introduction of DTV technology we are now on the threshold of major changes in broadcast television. This new technology will open the door to dramatic changes in the nature of broadcast television, allowing broadcasters to offer high definition television service, with major improvements in picture quality, compact-disc quality audio signals,

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[1] See Sixth Report and Order, MM Docket No. 87-268, 12 FCC Rcd 14588 (1997). In the associated Fifth Report and Order in MM Docket No. 87-268, 12 FCC Rcd 12809 (1997), we established service rules relating to the implementation of DTV service.

[2] DTV refers to any technology that uses digital techniques to provide advanced television services such as high definition TV (HDTV), multiple standard definition TV (SDTV) and other advanced features and services.

[3] As used herein, the term "channel" generally refers to the 6 MHz spectrum block currently used to provide a single NTSC television service or to the equivalent 6 MHz spectrum block to be used for DTV services. In each case, the NTSC and DTV channel numbers used herein correspond to the same frequency bands. For example, NTSC channel 2 and DTV channel 2 both correspond to the frequency band 54-60 MHz. It should be noted, however, that whereas an NTSC frequency or channel is used to provide a single television program service, digital technology permits DTV frequencies or channels to be used to provide a wide variety of services, such as HDTV, multiple SDTV programs, audio, data and other types of communications.

[4] In addition, we received a substantial number of oppositions/comments, replies, supplemental filings and related filings. Listings of the parties submitting petitions and related filings are provided in Appendix A.

[5] Our DTV implementation plan is finalized through this Memorandum, Opinion and Order and our related Memorandum Opinion and Order addressing petitions for reconsideration of our DTV service rules, FCC 98-23, adopted February 17, 1998.

simultaneous multiple program services ("multicasting"), and data services. Broadcasters will also have the flexibility to switch easily and quickly the types of services they provide and amount of their total digital bit stream that is used for each type of service. These new capabilities will allow broadcasters to offer immediate and significant improvements in the service they provide to the public and provide them the flexibility to alter their mix of services or add new services in response to viewer demand and future technical advances. The advent of digital television service will also promote greater competition within the broadcast industry by providing individual broadcasters with greater ability to differentiate their services from those of other broadcasters. In addition, the expanded service capabilities provided by the new DTV system will enhance the ability of broadcasters to compete with other video services such as cable television, direct broadcast satellite service and others.

4. In our action herein, we are generally maintaining the DTV allotment principles and policies set forth in the Sixth Report and Order. We are, however, making a number of revisions in response to the petitions for reconsideration. These include: 1) amending and expanding the DTV core spectrum approach, which establishes a plan for recovery of a portion of the television spectrum after the transition, to include channels 2-6, so that the final DTV core spectrum will be channels 2-51; 2) permitting increased power for UHF DTV stations through use of antenna beam-tilting techniques; 3) adopting a *de minimis* interference standard for changes to the DTV Table; 4) clarifying a number of rules and procedures for modifying the DTV Table; and 5) providing more specific guidance and procedures for low power stations that may be displaced or otherwise impacted by DTV operations. In addition, we are revising a number of the DTV allotments to address new test data on DTV-to-DTV adjacent channel performance; to reduce interference problems such as in the Southern California region; and to respond to requests from petitioners. The discussion herein first addresses the petitioners' requests for reconsideration of our DTV allotment policies and rules and then addresses requests for modification of specific allotments included in the DTV Table in light of the revisions to our policies and rules.

II. BACKGROUND

5. In the Sixth Report and Order, we adopted: 1) a comprehensive plan for the establishment of an initial DTV Table of Allotments and assigning those allotments to eligible broadcasters; 2) an initial DTV Table that was developed using those policies and a sophisticated computer allotment system; and 3) plans for spectrum recovery. In allotting DTV channels, we first sought to accommodate all eligible broadcasters with a second channel for DTV service. We indicated that this approach will promote an orderly transition to the new service by ensuring that all eligible full service broadcasters are able to provide digital service. Eligible broadcasters include all parties that, as of the date of issuance of the initial DTV licenses, are licensed to

operate a television station or hold a permit to construct such a station, or both.[6] The DTV Table of Allotments adopted in the Sixth Report and Order provides a channel for all such eligible broadcasters. In addition, we attempted, to the extent possible, to provide each broadcaster with a new channel that will allow them to "replicate" the service areas of their existing NTSC operations, *i.e.*, to provide DTV service to areas that are generally comparable to their existing NTSC service areas. Thus, broadcasters were assigned DTV channels that would best allow them to match their stations' existing service areas. The DTV Table was also designed to minimize all unavoidable interference to both existing analog TV and new DTV service.

6. In addition, we provided for recovery of a portion of the spectrum now used by television broadcasting. In particular, the DTV Table allows for early recovery of the 60 MHz of spectrum now used for TV channels 60-69 (746-806 MHz), and also provides for recovery of up to an additional 78 MHz at the end of the DTV transition period, for a total recovery of up to 138 MHz of spectrum. Under this plan, all DTV channels will eventually be located in a core spectrum of VHF and UHF TV channels that are technically most suited to DTV operation. The DTV Table adopted was based on use of channels 2-51. However, we also stated that in the future we would specify a core spectrum of either channels 7-51 or 2-46, and that in deciding this issue we would consider whether the lower VHF channels 2-6 prove acceptable for DTV use.

7. In the Sixth Report and Order, we continued the secondary status of low power television (LPTV) and TV translator stations.[7] However, we adopted a number of administrative and technical measures to minimize the impact of DTV implementation on low power operations. We also adopted policies and rules with respect to a number of other issues related to the DTV allotments and to the implementation of this new service. Other issues addressed include DTV transmitter sites, existing vacant NTSC allotments, applications for new NTSC stations and NTSC station modifications, sharing with land mobile operations, a DTV frequency labeling plan, negotiations among broadcasters for allotment and assignment changes, and the use of industry frequency coordinators in developing allotment changes. We generally used the

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[6] In the Fifth Report and Order, in this proceeding, we adopted eligibility criteria for the initial DTV allotments that conform with the guidance set forth in Section 201of the Telecommunications Act of 1996 (1996 Telecommunications Act). Section 201 of the1996 Telecommunications Act amends the Communications Act of 1934 to add a new Section 336 that provides, inter alia, that "[i]f the Commission determines to issue additional licenses for advanced televison services, the Commission ... should limit the initial eligibility for such licenses to persons that, as of the date of such issuance, are licensed to operate a television broadcast station or hold a permit to construct such a station." We therefore limited the initial eligibility for DTV licenses to persons that, as of the date of such issuance, are licensed to operate a television station or hold a permit to construct such a station, or both. See Fifth Report and Order, at Section III. B.; see also Telecommunications Act of 1996, Pub. L. No. 104-104, Section 201, 110 Stat. 56 (1996), and 47 U.S.C. 336. Consistent with our decision in the Fifth Report and Order in this proceeding, the date of issuance of the initial DTV licenses is April 3, 1997, the date of the adoption of both the Fifth Report and Order and the Sixth Report and Order.

[7] In light of their similar status and treatment under our rules, we often use the term "LPTV" herein to refer both to low power television and TV translator stations.

technical and interference characteristics of the ATSC DTV Standard in developing the DTV allotments and in specifying the criteria for determining the technical acceptability of requests for modification of the Table.[8] Finally, we set forth technical criteria for the allotment of additional DTV frequencies and the modification of allotments included in the initial Table.

8. We received 231 petitions for reconsideration of issues addressed in the Sixth Report and Order. At the time the petitions were first received, our staff observed that many of the petitioners expressed concern that OET Bulletin No. 69, which is referenced in the new rules as a source of guidance for evaluating DTV coverage areas, was not available and that they therefore had not been able to fully evaluate the DTV channels that were paired with existing stations.[9] They generally argued that without the technical guidance of OET Bulletin No. 69, they were unable to fully evaluate either the acceptability of the DTV allotments provided for their existing stations or the suitability of alternative channels. These parties also generally requested that we provide additional time after the issuance of OET Bulletin No. 69 to evaluate their allotments and then supplement their petitions with additional information relating to specific changes in the DTV Table.

9. On July 2, 1997, our Office of Engineering and Technology issued an Order, DA 97-1377, clarifying the Sixth Report and Order with respect to OET Bulletin No. 69 and providing an additional period of time for parties requesting reconsideration of additional DTV allotments to submit supplemental information relating to their petitions. OET Bulletin No. 69 was released concurrent with that Order. The Order clarified that OET Bulletin No. 69 provides guidance on the implementation and use of the Longley-Rice methodology for evaluating DTV and NTSC coverage and interference. It further clarified that this guidance is generally intended to be used for the purposes of preparing applications requesting facilities that do not conform to the DTV Table, petitions to amend the DTV Table, applications for new DTV stations, changes in authorized DTV stations, and evaluating the impact of low power TV and TV translator stations on DTV service areas. In short, the Order explained that the purpose of OET Bulletin No. 69 is to serve as a guide for parties preparing submissions for possible actions that we might take subsequent to the development of the initial DTV Table. It also explained that the information in OET Bulletin No. 69 is not essential for evaluation of the DTV allotments adopted in the Sixth Report and Order. It noted that the terrain dependent Longley-Rice propagation model and the methodologies used in evaluating DTV coverage and interference are

[8] "ATSC" is the Advanced Television Systems Committee, an industry organization whose members include television networks, motion picture and television program producers, trade associations, television and other electronic equipment manufacturers and segments of the academic community. In the Fourth Report and Order in MM Docket No. 87-268, 11 FCC Rcd 17771 (1996), we adopted a modification of the ATSC DTV Standard as the standard for transmission of digital television. This modification is consistent with a consensus agreement voluntarily developed by a broad cross-section of parties, including the broadcasting, consumer equipment manufacturing and computer industries. The standard we adopted differs from the ATSC DTV Standard in that it does not include the ATSC specifications with respect to scanning formats, aspect ratios, and lines of resolution.

[9] See 47 CFR 73.622(e), 73.623(c), 74.703(a), 74.705(e), and 74.707(e).

well known to the broadcast industry. Nonetheless, in view of the concern that occurred with regard to this Bulletin, the Order provided the parties that requested reconsideration of their DTV allotments an additional opportunity to supplement their petitions. We received 65 supplements to petitions for reconsideration pursuant to this opportunity.[10]

10. On November 20, 1997, the Association for Maximum Service Broadcasters, Inc. and other broadcasters (MSTV) submitted an *ex parte* filing that presents suggestions for addressing two issues relating to the DTV Table of Allotments. The first of these issues concerns DTV-to-DTV adjacent channel assignments. The second concerns assignments in the most congested areas of the country -- the Northeast, the Great Lakes region, and the California coastal area. MSTV's filing suggests making 357 changes to the DTV Table in the continental United States. Then, on November 25, 1997, the Association of Local Television Stations, Inc. (ALTV) submitted a proposal, by letter, for addressing the disparity in the authorized power between the DTV channels of existing UHF stations that will operate on UHF DTV channels (U-to-U stations) and the DTV channels of existing VHF stations that will operate on UHF channels. ALTV's proposal would permit DTV stations to increase power to 1000 kW, provided tilt-beam antennas and/or other technologies are employed to prevent any incremental visible interference. In a Public Notice released December 2, 1997, the Chief of the Commission's Office of Engineering and Technology provided an opportunity for parties to respond to these filings by MSTV and ALTV.

11. On July 9, 1997, we adopted a Notice of Proposed Rule Making in ET Docket No. 97-157, FCC 97-245 (released July 10, 1997), proposing to reallocate channels 60-69. Specifically, we proposed to allocate 24 MHz at 764-776 MHz and 794-806 MHz to the fixed and land mobile services and to designate this spectrum for public safety use. We proposed to allocate the remaining 36 MHz at 746-764 MHz and 776-794 MHz to the fixed, mobile and broadcasting services, and anticipated that licenses in this band may be assigned through competitive bidding. Subsequent to this Notice, on August 5, 1997, the Balanced Budget Act of 1997, Pub. L. 105-33, 111 Stat 251 (1997), was enacted. It added a new Section 337(a) to the Communications Act requiring that, by January 1, 1998, the Commission must reallocate 24 MHz of the channel 60-69 spectrum for public safety use, and that it reallocate the remaining 36 MHz of that spectrum for commercial use to be assigned by competitive bidding. Under the provisions of Section 337(a) the Commission is to commence licensing of the public safety portion of this reallocation by September 30, 1998 and is to commence competitive bidding for the commercial licenses after January 1, 2001. A Report and Order in ET Docket No. 97-157 completing this reallocation was adopted on December 31, 1997, FCC 97-421, released January 6, 1998.

[10] As indicated above, the parties filing supplements to their petitions for reconsideration and the parties filing related responses are listed in Appendix A.

III. DTV ALLOTMENT ISSUES

A. General DTV Allotment Plan

12. The Association for Maximum Service Television, Inc., the Broadcasters' Caucus and other broadcasters (Joint MSTV Petitioners) request that we reconsider and clarify certain aspects of the Sixth Report and Order.[11] The Joint MSTV Petitioners submit that the DTV allotments/assignments are premised on many of the principles supported by a majority of broadcasters and that they do not seek to alter the basic priorities and principles on which the DTV allotments/assignments are based. They recognize that the DTV allotments are the product of a balancing among many different interests and goals, such as the recovery of channels 60-69, protection of land mobile service, replication of NTSC service, minimization of interference, etc. They state that in most cases the results of this balancing are acceptable, but in certain limited cases they are not. For example, the Joint MSTV Petitioners contend that in a few parts of the country, *i.e.* the Northeast Corridor, Great Lakes, and California Coastal regions, interference and replication remain concerns. They argue that given the congestion in these areas, stations have few, and in many cases no, options to improve their service via channel or facility changes. Accordingly, they seek "targeted and limited adjustments" to the DTV allotments/assignments, so as to prevent the loss of DTV and NTSC service. In particular, they request that we allow a limited number of exceptions to the restriction with regard to use of channels 60-69, among other things.[12] They argue that our priority to keep channels 60-69 free of DTV allotments has resulted in increased interference, and that limited exceptions to the channel 60-69 bar must be made to correct some of the most troublesome allotments in the congested areas.[13]

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[11] The Broadcasters' Caucus is an ad hoc group of broadcast organizations (ABC, Inc, the Association of Local Television Stations, Inc. (ALTV), the Association of America's Public Television Stations and the Public Broadcasting Service (AAPTS/PBS), CBS, Inc., Chris Craft, Fox Television Stations, Inc. (Fox), the Association for Maximum Service Television, Inc. (MSTV), the National Association of Broadcasters (NAB), the National Broadcasting Company (NBC), the Public Broadcasting Service (PBS), and Tribune Broadcasting Company (Tribune)) that was formed in 1990 as part of the Advanced Television Systems Committee (ATSC) to represent broadcasters on DTV issues. The Joint MSTV Petitioners' petition indicates that AAPTS/PBS supports the 50 kW power minimum and the 1000 kW power maximum and urges that exceptions be made to this maximum only in limited cases to correct the most severe replication problems. It further indicates that ALTV and Fox are not signatories to this petition. Joint MSTV Petitioners' petition, footnote 3. A number of other petitioners express support for the Joint MSTV Petitioners' filing in their individual petitions. These parties include, for example, California Oregon Broadcasting Inc. (COBI), Cosmos Broadcasting Corporation (Cosmos), Golden Empire Television Corporation (GETC), JDG Television Incorporated (JDG), Lee Enterprises, Inc. (Lee), Lincoln Broadcasting Company (Lincoln), Retlaw Enterprises, Inc. (Retlaw) and Television Wisconsin, Inc. (TV Wisconsin).

[12] For example, the Joint MSTV Petitioners also request limited exceptions with regard to the land mobile spacing protections and the 1000 kW cap on DTV power, as discussed below.

[13] For example, they observe that DTV channel 6 in Washington, D.C. is paired with NTSC channel 5. They note that we originally proposed to use channel 6, which poses potential for interference to FM radio service, only when there is no other readily available allotment opportunity that would provide for adequate replication of an

13. ALTV and a number of other parties representing UHF interests oppose the Joint MSTV Petitioners' petition to the extent that it seeks to solve some problems without addressing the UHF power issue.[14] They submit that the Joint MSTV Petitioners fail to address the power problem facing existing UHF stations that are assigned UHF DTV channels (U-to-U stations). ALTV, for example, states that in several specific respects their failure to address the UHF power problem is glaring. For example, ALTV notes that the Joint MSTV Petitioners assert that "many of the stations subject to the UHF power minimum have DTV service that extends significantly beyond their Grade B contours."[15] ALTV argues that such statements obscure the concerns that such stations may fail to provide reliable service even within their NTSC Grade A contours.

14. DeSoto Broadcasting, Inc. (DeSoto), the Minnesota Broadcasting Association (MBA), Mountain Broadcasting Corporation (MBC), and WWAC, Inc., argue that the DTV core spectrum plan will solidify the disparities in service between VHF and UHF stations and forever relegate UHF stations to second-class citizenship in the broadcast spectrum. These petitioners submit that under the core spectrum plan, it is very difficult to find available spectrum for the expansion of a station's service area. They state that if the entire existing broadcast spectrum was available, there would be little problem allowing smaller UHF stations to expand their reach, and LPTV and TV translators to find spectrum. Expressing the views of these parties, MBC requests that we eliminate the core spectrum and spectrum recovery policies and extend to broadcasters the choice to retain channel 60 to 69 assignments on a permanent basis.

15. Hardy & Carey LLP argue that a new DTV Table should be developed that will ensure that the ability of underdeveloped stations to grow will not be hampered. To facilitate this revision, they state that any spectrum recovery should be deferred until after DTV is fully implemented. Tribune contends that because we did not make full use of the entire existing TV spectrum, we were unable to adhere to our own minimum separation standards. It states that this results in a number of short spaced situations that will ultimately result in unacceptable interference to existing NTSC service or to new DTV service. It therefore submits that we should re-do the DTV Table, adhering more closely to our spacing requirements, even if in doing so we must allot channels outside the DTV core spectrum. It states that the objectives underlying the core spectrum can be realized when the television bands are re-packed after the transition. In its supplemental filing, Tribune urges that we eliminate any NTSC/VHF to DTV/UHF assignments on channels 60-69 in the DTV Table of Allotments in light of the recent Congressional action requiring that we reallocate 24 MHz in this band for public safety.

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existing station's service area. The Joint MSTV Petitioners submit that in this case, channel 69 was available for use in Washington. They further note that use of channel 6 for DTV in Washington will cause interference to other NTSC stations in Philadelphia, Pennsylvania and Richmond, Virginia.

[14] The UHF power issue is addressed in the DTV Power section below. See also letter of December 5, 1997, from Viacom and several other UHF broadcasters responding to MSTV's November 20, 1997, *ex parte* filing.

[15] See Joint MSTV Petitioners' petition, at p. 19.

16. The Association of Public-Safety Communications Officials-International, Inc. (APCO) and the Land Mobile Coordinating Committee (LMCC) seek reconsideration of the 15 DTV allotments on TV channels 60-69. These petitioners are concerned that where a DTV allotment occupies a channel in this range, that channel cannot be used in the affected area for other uses until the end of the transition. They state that the most severe situation is in Southern California, where there are six DTV stations and four existing NTSC stations on channels 60-69. It states that as a result nearly all of the 746-806 MHz band is, or will be, encumbered and public safety agencies in Southern California will have to wait for these frequencies until the end of the transition. APCO argues that this is the most spectrum-congested area where there is an immediate need for additional spectrum for public safety. APCO and LMCC state that we should explore all possible methods for eliminating the allotments in channels 60-69.

17. The California Highway Patrol (CHP), the County of Los Angeles, California (LA County) and the LMCC also express concern that the use of channel 69 in particular for DTV in Southern California poses an interference threat to land mobile operations in the 800 MHz band. In this regard, LMCC submits that the channel 69 DTV allotment provided for KRCA-TV in Riverside, California could result in harmful interference to existing Los Angeles area public safety, private and special mobile radio (SMR) systems operating in portions of the adjacent 806-821/851-866 MHz band. These petitioners request that we provide KRCA-TV with a different channel for DTV service and that we otherwise avoid the use of channel 69 in reallotting DTV channels in Southern California. LMCC also requests that we affirm that stations allotted channels adjacent to existing land mobile operations will bear the responsibility of ensuring that no harmful interference occurs to land mobile systems as a result of their operations.

18. A number of parties representing low power interests argue that the plan for early recovery of channels 60-69 will adversely impact low power television (LPTV) and TV translator stations. For example, Abacus Television, Jose Luis Rodriguez, and the Videohouse, Inc. (Urban LPTV Parties), the Community Broadcasters Association (CBA), and the Department of Special Districts, San Bernardino, California (DSD) submit that the removal of channels 60-69 from broadcasting service will cause the loss of many LPTV stations that currently operate on those channels. Telemundo states we need to weigh the important service provided to Hispanic viewers by its LPTV operations and the value of diversity against the spectrum efficiency concerns prompting the reclamation of channels 60-69.

19. The DSD and the Urban LPTV Parties request that we withhold final action on the reallotment of channels 60-69 until after the transition. CBA states that whatever the ultimate disposition of channels 60-69 may be, LPTV stations should be allowed to remain and/or to move there until the mandatory end of analog NTSC service. It states that any spectrum sold at auction should be sold with a caveat that use of some of it may have to wait until the end of the digital transition. Telemundo argues that no broadcast service should be displaced by a non-broadcast service, and specifically that LPTV stations operating in channels 60-69 should never be displaced due to reclamation of their channels unless the Commission provides alternate channels. KM Communications (KMC) states that the methodology for the DTV Table should

be reconsidered and developed on a basis which minimizes displacement of LPTV stations by all available means, including use of channels 60-69. It submits that at a minimum, channels 60-69 should be used in major urban markets for displaced LPTV stations.

20. First Baptist Church, Paris, Texas (FBC) submits that, as a result of the Sixth Report and Order, there are no unused television channels available for which it may apply.[16] FBC requests that we take some action to reserve spectrum for use by new applicants.

21. In its November 20, 1997, *ex parte* filing, MSTV suggests making 357 changes to the DTV allotments in the continental United States. It submits that these changes would reduce interference to both NTSC and DTV service in the congested areas and cure the short-spacing of a large number of the cases of DTV-to-DTV adjacent channel allotments. It further submits that neither the Commission nor the industry knew of the adjacent channel problem until late summer, when the ATTC study of DTV-to-DTV adjacent channel operations was released. MSTV's suggestions would place an additional 32 allotments on channels 60-69 in the continental U.S. It states that these additional allotments on channels 60-69 would have little impact on the availability of spectrum for public safety services.

22. Over one hundred filings were submitted in response to the suggested changes set forth in MSTV's *ex parte* filing. A number of parties supported the MSTV changes and/or indicated that the suggested changes improved their individual situations.[17] ABC, Inc. (ABC), for example, states that the MSTV changes solve the problems it has identified in its individual petition for reconsideration and provides a fair and workable plan to remedy the most egregious cases of interference as well as the DTV-to-DTV adjacent channel interference problem. Tribune states that the MSTV Table would eliminate the problematic DTV channel 68 allotment for its station, KTLA-TV in Los Angeles and correct interference in the Northeast corridor. Astroline Communications Company, Brunson Communications, Inc., Central Michigan University, Gulf-California Broadcast Company and others endorse the MSTV changes for their individual stations. They indicate that the proposed changes would eliminate interference, eliminate out-of-core operation, or improve replication for their stations.

23. On the other hand, the majority of parties that submitted responses, including both broadcast and public safety interests, oppose the changes suggested by MSTV. These parties generally argue that the MSTV changes would result in their stations being disadvantaged in

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[16] In 1987, the Commission issued an Order (Freeze Order) stating that it would not accept applications for any new stations in 30 major markets. See Order, RM-5811 (Mimeo No. 4074, released July 17, 1987). FBC states that it had been investigating applying for one of two vacant NTSC allotments at Paris, Texas, but was unable to do so because of the freeze on acceptance of new NTSC applications in certain major markets

[17] See also, for example, submissions filed by American Christian Television Services, Inc., Advanced Television Technology Center, Inc., Association of Federal Communications Consulting Engineers, Carolina Christian Broadcasting, Inc., Community Television, Granite Broadcasting Corporation, JDG Television, Inc., Meyer Broadcasting Company, Midwest Television, Inc., United Communications Inc. and WLNY-TV, Inc.

some way, such as receiving more interference, reducing service replication or being assigned out-of-core DTV channels. Parties representing public safety interests oppose MSTV's changes to the extent that the changes use additional channel 60-69 DTV allotments and thereby would reduce the amount of spectrum available to public safety and propose allotments that infringe on current land mobile shared spectrum. AAPTS/PBS, for example, state that the MSTV Table creates additional out-of-core and technical problems for a number of PTV licensees. It states that the MSTV Table would increase the number of PTV stations with both their NTSC and DTV channels out of the core spectrum and would increase the number of PTV stations on channels 60-69. It also states that the proposed changes would reduce coverage and replication for some PTV stations and create other problems for PTV stations.

24. Bangor Communications, Inc., states that while the MSTV filing purports to improve the DTV Table, the proposed changes would result in a disproportionate loss of viewers and coverage area for its station. Central Virginia Education Telecommunications Corporation (CVET) states that MSTV's suggested changes would have a significant adverse effect on its station since under MSTV's approach both of its channels would be outside of the core spectrum. Cox broadcasting (Cox) states that its stations will lose a substantial number of viewers and coverage if the MSTV proposals are adopted. Chris-Craft/United Group (Chris-Craft) and Golden Orange Broadcasting Co., Inc., in their separate filings, oppose MSTV's changes for their stations in the Los Angeles market area. Chris-Craft states that MSTV's proposed change for its station would conflict with an existing Mexican television allotment. Dispatch Broadcast Group (Dispatch) objects to MSTV proposal to assign DTV channel 21 in Columbus, Ohio to WCMH-TV rather than to Dispatch's WBNS-TV in the same market. Dispatch states that this proposed assignment is not necessitated by either of the two problems the MSTV filing purports to address. Sullivan states that in most cases MSTV changes do not benefit its stations and, in some cases, makes their prospects worse.

25. APCO, the County of Los Angeles, Motorola, National Public Safety Telecommunications Council (NPSTC) generally oppose the changes suggested by MSTV to the extent it proposes additional use of channels 60-69. NPSTC, for example, notes that MSTV proposes 32 new DTV allotments on channels 60-69 and 23 of these are either on or adjacent to channels proposed for public safety use. They state that these allotments would severely reduce the ability of public safety agencies in a number of major metropolitan areas. The New York Metropolitan Advisory Committee states that MSTV's proposed channel 16 DTV allotment for New Haven, Connecticut would pose harmful interference to its existing land mobile operations on UHF TV channels 14-20.[18] It further states that the additional channel 60-69 DTV allotments

[18] The New York Metropolitan Advisory Committee includes: the New York City Police Department, New York City Fire Department, New York City Department of Correction, New York City Department of Parks and Recreation, New York City Department of Information technology and Telecommunications, New York City Department of Transportation, New York City Transit Authority, Fire Department of the City of Yonkers, Police Department of the City of New Rochelle, Nassau County Police Department, Suffolk County Police Department, Elmont Fire District, and Bergen County, New Jersey, Police Department.

would prevent the use of this spectrum for public safety in New York City. APCO, the County of Los Angeles and NPSTC do, however, support MSTV's proposed elimination of the use of channels 68 and 69 for DTV in Los Angeles.

26. Decision. We continue to believe that the general principles and priorities used for the development of the DTV allotments/assignments remain appropriate. We reaffirm our approach to provide all eligible broadcasters with the temporary use of a second channel that, to the extent possible, will allow them to replicate the service areas of their existing NTSC operations. We continue to find that such an approach will promote the orderly transition of DTV by broadcasters and foster the provision of service to the public. We also affirm our general plans for spectrum recovery, including the core spectrum and the early recovery of channels 60-69, and maintaining the secondary status of low power stations. In this regard, the petitioners have not presented any new information or analysis that was not available at the time of the Sixth Report and Order that would warrant a change in our basic plan to recover a portion of the existing television spectrum, nor have they persuaded us that we were incorrect in our balancing of the various factors that weigh in this issue.

27. To the extent that petitioners, such as the Joint MSTV Petitioners, suggest that certain "targeted and limited adjustments" to the DTV Table are needed, we are making a number of limited changes in the DTV Table of Allotments in order to prevent the loss of DTV service and minimize the impact of DTV operations on existing NTSC service. In this regard, for example, we have reviewed the DTV-to-DTV adjacent channel situations identified in MSTV's *ex parte* filing and are modifying the DTV allotments to eliminate these DTV-to-DTV adjacent channel situations in a number of instances. Specifically, we are making changes to 42 DTV allotments, including a number of the changes suggested by MSTV, to resolve cases where use of adjacent channels is no longer acceptable and would impact our service replication and interference goals.[19] We also, as discussed below, are making a number of modifications to our technical rules for DTV operation to further reduce the potential for interference between DTV stations that operate on adjacent channels in the same area. We are further making 29 additional allotment changes to address requests by individual petitioners. As part of these changes, we agree with MSTV and others parties, including those representing land mobile interests, that some revision to the DTV allotments are needed in the Southern California area. Therefore, the 29 changes include modifications to four DTV allotments in this region to address concerns regarding interference to television and land mobile services. We believe that these 71 changes, adequately address the interference and replication concerns identified in MSTV's *ex parte* filing and the petitions of other broadcasters.

28. We do not find that additional changes in the DTV Table or increased use of channels 60-69 are needed or warranted to address either DTV adjacent channel concerns or DTV operations in the congested areas identified by MSTV and other petitioners. As the Joint MSTV

[19] See discussion of adjacent channel issues below.

Petitioners note in their petition, the DTV allotments are the product of a balancing among many different interests and goals. While some broadcast parties would have liked such balancing to give greater preeminence to certain specific broadcast concerns, the Commission must balance all of the relevant factors in determining the public interest. In this regard, we find that the DTV Table of Allotments, as amended herein, will provide the vast majority of broadcasters with DTV allotments that offer a high level of service replication. We further conclude, as indicated below, that making additional changes would provide little or no improvement, would have other adverse consequences such as increasing the number of out-of-core allotments or allotments on channels 60-69, or would lead to the improved service of some broadcasters at the expense of other broadcasters.

29. As stated in the Sixth Report and Order, we find the impact of our core and spectrum recovery approaches on interference to be insubstantial.[20] The new DTV Table of Allotments ensures that almost 99 percent of all existing NTSC service areas and viewers will be unaffected by the implementation of DTV. We note that the cumulative differences in NTSC interference between the DTV Table, as amended herein, and the recently filed MSTV Table that includes 357 new changes are a small fraction of 1 percent. As we indicated with regard to the previous Table submitted by MSTV and the Joint Broadcasters, such a difference is not scientifically significant or is at best *de minimis* when considering the accuracy and probalistic nature of propagation and the other engineering models and assumptions used to calculate interference.[21] We further note that practical implementation considerations, such as transmitter moves required because of lack of tower space, will likely result in far greater differences.

30. We further find that full implementation of MSTV's suggested changes would come at a cost of many additional broadcasters being assigned out-of-core allotments that would necessitate those broadcasters being faced with a subsequent second DTV channel move and the costs of that move. In addition, we continue to find that the benefits associated with rapid recovery of channels 60-69 are substantial and would outweigh any positive impact that increased use of channels 60-69 might have for DTV implementation. Moreover, we believe that increased use of channels 60-69 would be inconsistent with our statutory mandate under Section 3004 of the Balanced Budget Act of 1997. In this same light, it is not practicable to eliminate all DTV allotments from channels 60-69 as requested by land mobile interests. We have found that it is necessary to make use of those channels for DTV allotments in a few instances in order to achieve our full accommodation and service replication goals.[22]

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[20] See Sixth Report and Order at para. 78.

[21] See Sixth Report and Order, at footnote 145.

[22] See Sixth Report and Order, at para. 76. As noted below, we have, however, amended the DTV Table to avoid the use of channel 69 in the Los Angeles area, as suggested in MSTV's *ex parte* filing. MSTV suggested a number of changes to the DTV allotments in the Southern California region including avoiding the use of both channels 68 and 69 in Los Angeles. MSTV's suggested changes, however, included 7 violations of the spacing requirements with Mexico:

31. We do not agree that the issue of the UHF/VHF disparity is best addressed through the elimination of the core spectrum approach, as suggested by DeSoto and others. We believe that there are other approaches, as discussed below, that will more effectively address this issue. With regard to Tribune's contention that we were unable to adhere to our own minimum separation standards because we did not make full use of the entire existing TV spectrum or an expanded core, we note that the DTV Table was not developed based on spacing distances. Rather, the Table was developed using engineering standards to provide for replication of existing NTSC service areas during the DTV transition period. In many instances, full replication can be achieved without meeting the spacing standards for new DTV allotments.

32. With regard to low power operations, we are affirming our earlier decision to permit low power stations to continue to operate on channels 60-69 on a secondary basis through the transition process. As set forth in the Report and Order in ET Docket No. 97-157, we have reallocated channels 60-69 for public safety and a broad range of other services, including broadcasting, in accordance with the requirements of the Balanced Budget Act of 1997. However, in that decision, we stated that low power stations will be allowed to operate on these channels, provided no interference is caused to primary users. We also encouraged, wherever possible, private negotiations between low power and new service providers to resolve interference problems in a manner which is acceptable and beneficial to both parties.

33. We do not find it desirable, or indeed, practical to reserve spectrum for new stations as requested by FBC. In many areas there remain opportunities for establishing new stations. We believe the best approach for accommodating new stations is through individual requests for amendment of the DTV Table. This will facilitate use of the available spectrum in locations where there is specific interest in establishing a new station. We also find that FBC's suggestions that we accommodate new stations by reducing or otherwise infringing the service areas of new DTV stations would be inconsistent with our goal of replicating the service areas of existing stations.

City	MSTV Chan.	Conflicts with Mexican Chan.
Huntington Beach, CA	49	49 Tecate, BN
Los Angeles, CA	21	21 Tecate, BN
Los Angeles, CA	33	33 Tijuana, BN
Rancho Palos Verdes, CA	29	29 Ensenada, BN
San Diego, CA	48	33 Tijuana, BN
Las Cruces, NM	35	20 Juarez, Chihuahua
Laredo, TX	17	17 Nuevo Rosita, Coahila

It was not possible to avoid the use of both channels 68 and 69 in Los Angeles and protect all Mexican allotments and assignments, as required.

B. Selection of the DTV Core Spectrum

34. As noted in the Sixth Report and Order, one of our principal concerns in this proceeding is to provide broadcasters with the best possible spectrum for DTV service.[23] In the Sixth Further Notice, we stated that a core region between channels 7-51 may be the most appropriate location for DTV broadcasting; that this spectrum would be sufficient to accommodate all existing broadcasters; and that it would provide additional DTV channels for new entrants after the conversion to digital service.[24] We noted that the lower VHF channels 2-6 are subject to technical penalties, including higher ambient noise levels and concerns of possible interference to and from FM radio service. We did, however, recognize that these channels offer unique characteristics for broadcasting, particularly with regard to propagation. In the Sixth Report and Order, we recognized that a number of commenting parties strongly believed that DTV signals can perform well in the presence of noise and that the lower VHF channels 2-6, with their desirable propagation characteristics, should be made part of the DTV core spectrum. However, other parties agreed with our initial assessment that these channels may not be appropriate for TV use. We therefore concluded that the best approach was to develop the DTV Table based on use of channels 2-51, and modified our allotment software to attempt to locate all DTV channels within this portion of the spectrum. We stated that if channels 2-6 prove acceptable for DTV use, we will consider retaining these channels for DTV use and adjusting the core spectrum to encompass channels 2-46, rather than channels 7-51.

35. A number of petitioners, including the Ad Hoc Group of 25 Low-VHF Stations (Low-VHF Stations), A.H. Belo Corporation (Belo), the Joint MSTV Petitioners, Capitol, Chronicle Publishing Corporation (CPC), Citadel Communications Co., Ltd. (Citadel), Cordillera, DSD, Granite Broadcasting Company (Granite), Harte-Hanks Television, Inc. (Harte-Hanks), Landmark Television of Tennessee, Inc. (Landmark),[25] Mt. Mansfield, Pulitzer Broadcasting Company (Pulitzer), Ramar Communications, Inc. (Ramar), Retlaw Enterprises, Inc. (Retlaw), Scripps Howard Broadcasting Company (SHBC), and the US Broadcast Group Licensees, L.P. (US Broadcast Group) request that we reconsider our decision to defer the determination of the final core spectrum pending information on the suitability of channels 2-6 for DTV service. These parties express concern with regard to the equivocation reflected in our statement that if the lower VHF channels prove acceptable for DTV use, we will consider retaining these channels for DTV and adjusting the core spectrum to encompass channels 2-46, rather than channels 7-51. For example, the Ad Hoc Group of 25 Low-VHF Stations (Low-VHF Stations) argue that no spectrum should be stigmatized with "wait and see" status, particularly channels 2-6.

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[23] See Sixth Report and Order, at para. 82.

[24] See Sixth Further Notice, at para. 19.

[25] Landmark addresses the inclusion of channels 2-6 in the DTV core in its supplemental filing.

36. Cordillera, Gannett, Landmark, the Low VHF Stations, and Retlaw argue that our concerns with regard to channels 2-6 are unfounded given the specially suitable characteristics of the lower VHF channels for wide-area broadcast service. The Low-VHF Stations and Retlaw submit that if noise problems in the spectrum at channels 2-6 emerge, there are means of dealing with those problems, such as encouraging manufacturers to develop more robust receivers and addressing leakage from power lines. The Joint MSTV Petitioners argue that more than 280 NTSC stations on low-VHF channels have provided outstanding service on these channels for many years. They also state that putting a cloud on the suitability of channels 2-6 now is problematic because it assumes that portions of the band are more hospitable to DTV without the benefit of real world data from the early stages of DTV implementation. Belo and the Low-VHF Stations similarly argue that our reservations with regard to channels 2-6 lack support in engineering calculations or field data.

37. Citadel and SHBC argue that the testing and analysis that has been completed to date indicates that the propagation characteristics of channels 2-6 provide superior coverage capabilities for DTV service and that potential interference concerns are minimal. They state that the field tests of the DTV system conducted in Charlotte, North Carolina indicate a substantially improved coverage area on DTV channel 6 as compared with analog TV service on the same channel. Citadel argues that while the Charlotte Report did indicate some unanticipated interference from impulse noise, the report noted that the study's results were impacted by the use of extremely limited power and that any interference would be substantially diminished when full power levels were employed.[26] It thus states that the record presents no reason to believe that channels 2-6 will fail to perform well for DTV.

38. These petitioners also generally argue that delaying the decision on channels 2-6 creates uncertainty for a considerable number of both commercial and noncommercial broadcasters, in that it makes business planning for the DTV era problematic. As expressed by Granite and Ramar, these parties generally state that by establishing the DTV core spectrum as encompassing channels 2-51 for the transition period, but holding out the possibility that licensees using channels 2-6 or 47-51 may be required to move, we are potentially placing unnecessary technical burdens and expense on stations whose DTV allotments are at either end of the core spectrum.

39. In view of the above considerations, these petitioners request that we expand or amend the DTV core spectrum to include channels 2-6. For example, the Low-VHF Stations and others ask that we consider all channels between 2 and 51 for the DTV core spectrum.[27] Hart-

[26] See "Terrestrial Broadcast Field Test Reports," in "Record of Test Results for Digital HDTV Grand Alliance System," submitted to the FCC Advisory Committee on Advanced Television Service (October 1995).

[27] A.H. Belo Corporation (Belo), Capitol Broadcasting Company, Inc. (Capitol), California Oregon Broadcasting Company (COBI), Gannett Co., Inc. (Gannett), Hubbard Broadcasting, Inc. (Hubbard), Lee Enterprises, Inc. (Lee), and Mt. Mansfield, Inc., support the Low-VHF Broadcasters request that all channels between 2-51 be considered

Hanks and Pulitzer state that more stations will be able to switch to their existing channels if the post-transition core is channels 2-46 than if the core is channels 7-51. Pulitzer states that by adopting a core of channels 2-46, a significantly greater number of stations (71 vs. 12) with initial DTV channels outside the core will be able to switch to their existing NTSC channels. Ramar states that we should make clear that the core spectrum includes channels 47-51, even if channels 2-6 are included in the core. Ramar believes that it is important to allocate as much core spectrum as possible to facilitate achievement of the important goal of providing high quality DTV service to all viewers.

40. Guy Gannett Communications (Guy Gannett), in its supplemental filing, maintains that television transmissions on channel 2 often experience interference caused by both impulse noise from natural and man-made sources and sporadic E-layer ionospheric reflections. Guy Gannett further states that this interference, coupled with the low ERP specified for WTWC-TV and the poor performance generally of commercially available receive antennas, makes it very unlikely that WTWC-TV could achieve the service replication necessary for viable DTV operations.

41. National Public Radio (NPR) requests that we reconsider the DTV Table to the extent that it provides DTV allotments on channel 6. It also states that we should reconsider permitting TV broadcasters to switch their DTV service to the their current NTSC channel 6 assignments at the end of the transition. NPR argues that it is inappropriate at this time to permit such an option because there has not been sufficient field testing or practical experience to determine whether it is appropriate to use channel 6 for digital broadcasting and that the return of 50 or more broadcasters to channel 6 may result in significant interference to FM radio services. NPR argues that in the case of an existing or new noncommercial FM station that either experiences or causes adjacent channel interference of a new type, degree, or effect that is associated with the operation of a DTV channel 6 station, the DTV station should be responsible for such interference. NPR also states that there is no justification for requiring FM noncommercial educational stations to bear the substantial costs and burdens associated with compliance with Section 73.525 of the rules, which requires that new noncommercial educational FM stations operating on channels 201-220 protect existing TV operations on channel 6, if it is believed that no adjacent interference will occur.[28]

42. Decision. We recognize that postponing a decision on the low-VHF channels has raised uncertainties for licensees whose existing and/or DTV channels are in that portion of the spectrum. We further understand that these uncertainties can make planning for DTV service more difficult and burdensome. We also concur that there is no engineering evidence available at this time to indicate that these channels are unsuitable for DTV operation and such channels offer desirable propagation characteristics for television service. We therefore recognize the

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fairly and equally as part of the final core spectrum.

[28] See 47 CFR 73.525.

benefits of including these channels in the core spectrum. We also note, however, that a DTV core spectrum of channels 2-46 would require significantly more second moves by broadcasters than a core of channels 7-51. In reconsidering this matter, we now believe that the most desirable course of action is to expand the core to include all channels 2-51.

43. This expansion of the core will eliminate the planning uncertainties for many broadcasters that have either DTV or NTSC channels in the channel 2-6 or 47-51 regions of the spectrum. Providing an additional five channels for DTV will reduce the number of out-of-core allotments, thereby further reducing the number of stations that will be required to make second channel moves. Expanding the core will also promote additional competition and diversity in the provision of DTV services by increasing the availability of channels for new stations and networks. Expansion of the core will also provide more flexibility to address new technical information on adjacent DTV channel performance and ensure that there is sufficient spectrum to eliminate DTV-to-DTV adjacent channel interference situations.

44. This change will also reduce the impact on low power operations. In this regard, channels 2-6 and 47-51 now support a significant number of low power and TV translators. The low VHF channels, for example, have some of the highest concentration of low power stations. Expanding the core to include channels 2-6 would eliminate the eventual displacement of most of these stations. In addition, expanding the core will also provide low power stations with more channels and opportunities for new stations and relocation of existing stations.

45. While we recognize that this change will reduce by 30 MHz the amount of contiguous spectrum to be recovered, we believe that the benefits of expanding the DTV core spectrum to include channels 2-51 outweigh the benefits of clearing either channels 2-6 or 47-51. Expanding the DTV core spectrum will permit recovery of 108 MHz of spectrum at the end of the transition period, which is more than one-fourth of the total spectrum used for broadcast television today. We note that this amount of spectrum is significantly more than our original plan to recover 72 MHz of spectrum.[29] While expansion of the core spectrum may raise concerns about providing broadcasters with additional spectrum and reducing the amount of spectrum available to other service providers, these concerns are offset by the fact that this expansion will provide additional opportunities for new DTV stations and other new digital data services. Our analysis indicates that expanding the core will add approximately 175 additional channels, and that many of these new channels will be in top markets, including at least three new channels each in congested and highly-valuable New York, Los Angeles, San Diego, San Francisco, and Detroit. Last July, Congress expanded our auction authority to include assignment of broadcast licenses and therefore most of the new channels will be awarded through our auction procedures, as required under new Section 309(j)(14)(C) of the Communications Act. Additional benefits also exist, including less interference to existing broadcasters in major markets during the transition, continued operation of some 500 additional low power TV and TV translator stations

[29] See Second Further Notice of Proposed Rule Making in MM Docket no. 87-268, 7 FCC Rcd 5376 (1992), at para. 18 and footnote 24.

that provide service to many suburban and rural areas and that otherwise might have been required to cease operation, and elimination of mandatory second moves into the core for about 120 broadcasters at the end of the transition. Based on these factors, we conclude that the public will benefit substantially from our expanding the core.

46. With regard to the concerns of noncommercial radio interests regarding the use of channel 6, we first note that in developing the initial DTV Table we have sought to minimizing the potential for interference between DTV and FM radio service by avoiding the use of channel 6 for DTV wherever possible. There is only one channel 6 allotment in the initial DTV Table. To the extent that stations may return to existing channel 6 assignments, we note that DTV operations will be at substantially lower power levels than existing NTSC channel 6 operations. Analysis by our staff indicates that the current rules for protection of analog TV channel 6 service from interference caused by FM radio service are adequate to protect DTV operations on existing analog channel 6 allotments as long as DTV coverage on these channels is the same as, or does not significantly exceed, the coverage of the analog service it would replace. The existing rules will similarly provide adequate protection for new DTV stations on new channel 6 allotments.[30] Our staff analysis also indicates that a DTV station operating on a new channel 6 allotment would not cause interference to an existing FM radio service in most cases, particularly where the FM station is operating at or near its maximum allowed power. In other cases, particularly where the FM station operates significantly below 3 kW, some interference may occur. We agree with NPR that noncommercial radio licensees should not be solely responsible for resolving interference that might result from our inclusion of channel 6 in the core spectrum. Accordingly, as a general matter and consistent with our longstanding policy regarding new stations, it will be the initial responsibility of a DTV licensee to protect against or eliminate harmful interference to any FM radio stations that are in operation at the time the DTV station commences operation. In view of our staff analysis, as discussed above, we believe this policy is adequate to address any instances where stations relocating their DTV service to their existing analog service channels might result in interference to FM radio service. In the case of new DTV stations on new channel 6 allotments, however, the nature of the potential for interference to FM service from DTV signals necessitates that determinations of whether such interference would occur be made on a case-by-case basis. We therefore will require that parties requesting allotment of new DTV allotments on channel 6 submit an engineering study to demonstrate that no interference would be caused to existing FM radio stations on FM channels 200-220.

C. Out-of-Core Allotments

47. A number of parties, including AK Media Group, Inc. (AK Media), Allbritton Communications Company (Allbritton), AAPTS/PBS, Brechner, Blade Communications, Inc.

[30] Section 73.525 of the rules, 47 CFR 73.525, provides interference protection to television stations operating on TV channel 6 from noncommercial FM radio stations operating on FM channels 200-220. This protection is provided through minimum mileage spacings or maximum power restrictions on co-located FM stations operating on those channels.

(Blade), the Christian Network, Inc. (CNI), the Educational Broadcasting Corporation (EBC), LeHigh Valley Public Television (LeHigh Valley), the University of North Carolina Center for Public Television (UNCTV), Univision Communications Inc. (Univision), and the WGBH Educational Foundation (WGBH) express concern regarding the additional burden that will be placed on stations that are provided transitional DTV channels outside the core spectrum. These parties generally state that because they will have relocate their DTV operations to channels within the core spectrum they will have to endure additional costs and be placed at a disadvantage with respect to their competitors. For example, Brechner submits that a "double move" for its stations, while unlikely to be as expensive the initial conversion to DTV, could easily cost millions of dollars in technical, legal and equipment costs, and in destabilizing effects on viewers and revenues. It further points out that a second conversion would necessitate changes to the digital converter equipment used at the headend of each cable system that carries the station and that affected stations could well be asked to bear the costs of such changes to cable retransmission equipment. These petitioners argue that the disparity in treatment of similarly situated broadcasters, where some must pay to relocate while others enjoy DTV allotments in the core is unfair. Univision also argues that a disproportionate number of minority-oriented licensees like itself have been allotted DTV channels in areas of the spectrum that will eventually be recovered and that the need for these stations to build their DTV facilities twice threatens the future health and diversity of minority programming.

48. The petitioners request that we take a variety of steps to alleviate the additional burdens faced by stations with out-of-core DTV channels. CNI requests that we modify the "no new interference criteria" for allotment changes to make it easier for such broadcasters to find channels in the core. AK Media Group, Inc. (AK Media) suggests that we require stations that have both a DTV and NTSC channel within the range of channels 7-46 to choose now the channel they intend to keep following the transition. It states that this would allow stations with out-of-core DTV channels to know the channels that will be available so that they can select their ultimate DTV channel now. AAPTS/PBS makes a similar request with regard to public television (PTV) licensees.

49. Allbritton submits that replicating the signals of some of its existing VHF stations on out-of-core UHF channels will necessitate the construction and operation of massive transmitters. It states that the burden of cost and difficulty associated with these conversion investments will be heightened because the stations' DTV channels must be surrendered after the transition. Allbritton therefore requests that we permit stations with out-of-core DTV channels to retain those channels after the transition. It also states that we should consider alternative proposals for new allotments for these stations.

50. AAPTS/PBS and other parties representing the interests of noncommercial stations are concerned that a number of PTV stations were provided out-of-core DTV channels and that the burdens associated with such channels will materially impair the ability of these stations to make the transition to DTV. AAPTS/PBS submits that many PTV stations will have great difficulty in building a single DTV facility, and given their reliance on federal, state and private

contributions for operating and capital expenses, it will be difficult or even impossible for PTV stations assigned channels outside the core to build a second DTV facility in the short span of the transition period. It further submits that because PTV stations must raise capital funds from the same sources as operating funds, the need to raise additional funds to construct a second DTV station may affect the ability of even the largest PTV licensees to fund their operating expenses. These petitioners request that we take a number of steps specifically to alleviate the burdens of out-of-core allotments on public television stations.

51. AAPTS/PBS and EBC request that, to the extent we modify the DTV Table, we also allot, wherever possible, core channels for PTV licensees currently allotted channels outside the core.[31] WGBH states that we should give special consideration to PTV stations with out-of-core DTV channels as DTV channel assignments are changed and channels become available for reassignment. Specifically, it requests that we provide that PTV stations with out-of-core NTSC and DTV channels be entitled to be "first in line" to move to technically appropriate channels within the core as such channels open up if, for example, licensees do not participate in the conversion or do not construct their facilities on time.

52. AAPTS/PBS further submits that we should provide PTV stations with out-of-core DTV channels greater flexibility than the rules currently provide to deal with the burdens caused by out-of-core allotments. In this regard, it requests that we allow PTV stations with DTV allotments outside the core spectrum to select DTV channels in the core, even if the alternative channel does not fully comport with our planning factors. Such exceptions to the planning factors could include, for example: 1) channels that do not fully replicate a station's NTSC coverage; 2) channels that require the station to operate from a transmitter site more than 5 km from its current site; or, 3) channels that receive more interference from NTSC stations than our planning factors allowed. AAPTS/PBS states that such solutions would, of course, only be acceptable if they did not cause additional interference to another DTV allotment, an existing NTSC station, or a currently pending NTSC application, or if the affected licensee or applicant concurs. AAPTS/PBS submits that while these suggestions vary from the principles used in developing the DTV Table, they are not inconsistent with them, in that they would protect DTV allotments and existing and proposed NTSC stations. AAPTS/PBS next requests that we permit a PTV licensee with both NTSC and DTV channels outside the core to defer construction of its DTV station until its permanent DTV channel is assigned. It states that this would alleviate the burden of constructing a DTV station that would have to be abandoned relatively soon, perhaps some three or four years after it is built. AAPTS/PBS also states that we should allow PTV stations with an NTSC channel out of the core and a DTV assignment in the core to operate an NTSC station on the in-core DTV channel during the transition and to switch operation to DTV on that same channel at any point during the transition, as long as no additional interference is caused. It further states that we should allow PTV stations with both an NTSC and DTV channel within the core to convert to DTV on their in-core NTSC channel, rather than having to spend the

[31] LeHigh Valley and UNCTV support the AAPTS/PBS position with respect to assignment of public television stations to DTV stations in the core.

resources to build a separate DTV stations.

53. In addition, AAPTS/PBS requests that we allow PTV licensees with two or more stations in a market to use any of the channels assigned to them for NTSC or DTV operation, as long as no additional interference is caused to other stations. AAPTS/PBS states that as with any multiple station licensee, it would be particularly burdensome for such licensees to construct multiple DTV stations simultaneously. They submit that the existence of a second station in the same market affords the possibility of a workable compromise that would ensure that the public retains access to the licensee's analog and digital services throughout the transition. They also argue that PTV licensees with two stations in the same market should be permitted to employ the overnight switch option and convert one of their stations to DTV on either their current NTSC or their allotted DTV channels.

54. A number of petitioners, including AK Media, Allbritton, AAPTS/PBS, Brechner, Capitol, CPC, Citadel, EBC, Fox, Granite, Harte-Hanks, the Joint MSTV Petitioners, Pulitzer and WGBH request that we address the issue of compensation for full service and low power stations displaced by new service providers on reconsideration, rather than address this issue in a future rule making proceeding. In a statement representative of these petitioners, the Joint MSTV Petitioners request that, on reconsideration, we require that new users of the recaptured broadcast spectrum compensate broadcasters for the cost of forced relocation to the core spectrum. They argue that the transition to DTV will impose heavy financial burdens on broadcasters and that compensation for relocation would avoid an additional burden of spectrum recovery that is particularly onerous for small and noncommercial stations and that falls arbitrarily on some stations and not on others. AAPTS/PBS states that the availability of reimbursement would provide some additional assurance that PTV stations will be able to continue operations after the transition. AAPTS/PBS and EBC state that since new public safety users of channels 60-69 would be unable to pay broadcasters' relocation costs, the reimbursement could be either from a general pool of funds collected from the auctioned spectrum, from the commercial entities that acquire the spectrum in the affected market, or some other source. WGBH requests that we expressly adopting the principle that licensees assigned out-of-core channels, particularly licensees of noncommercial stations and those with out-of-core NTSC channels as well, be compensated for the costs of moving their DTV operations to an in-core channel as a result of spectrum recovery.

55. Decision. We recognize the additional burden placed on licensees with out-of-core DTV allotments. In view of this concern, we have attempted to minimize to the extent possible the number of out-of-core DTV allotments in developing the DTV Table. We note that we are further reducing the number of stations with out-of-core DTV channels by our expansion of the DTV core spectrum to include all channels between 2-51, as discussed above. As a result of these efforts, there are now only 189 stations with out-of-core DTV allotments. All but 12 of these stations have existing NTSC channels within the core spectrum to which they may relocate at the end of the transition period. In addition, to the extent that in-core channels become available during the transition, we will attempt to further reduce the number of out-of-core

allotments in any future amendments to the Table.

56. In general, we do not believe that approaches such as CNI's suggestion that we modify our "no interference criteria" would offer significant relief in further reducing the number of out-of-core allotments. We note that most out-of-core allotments occur in the most congested areas of the country where we have already permitted some interference in order to achieve our goal of full accommodation and to maximize the number of in-core allotments. We also do not find that it is practicable to require stations to choose now the channel they intend to keep following the transition, as suggested by AK Media. We believe that in implementing a new technology such as DTV, stations will need some experience to make an appropriate decision on which channel to keep. We are also denying Allbritton's request that we permit stations with out-of-core DTV channels to retain those channels after the transition. Such an approach would be contrary to our decision to eventually recover this spectrum and reallocate it for new uses.

57. We agree with AAPTS/PBS and other parties that the allotment of out-of-core channels may present a particular burden to noncommercial public television licensees because of their reliance on federal, state and private contributions to raise funds. In this regard, we are initiating a separate proceeding to seek comment on the ability of noncommercial public television stations to use the DTV channel capacity for commercial purposes. As discussed above, however, we are not undertaking a general revision of the DTV Table that would facilitate relocation of the DTV allotments of all PTV stations to in-core channels, as requested by AAPTS/PBS and EBC. We also believe that providing all PTV stations with an in-core DTV allotment at this time would pose significant problems for replication and interference. Nevertheless, as stated in the Sixth Report and Order, we remain committed to the recovery of channels temporarily assigned for the transition.[32] Once these channels are recovered, there will be adequate spectrum to ensure that all stations with initial out-of-core DTV allotments can readily be provided with new channels within core spectrum between channels 2-51. In this regard, we do not believe that any special provisions or priorities for PTV stations are needed at this time. With regard to WGBH's request that PTV stations with both NTSC and DTV channels out of the core should receive "first in line" priority in obtaining new channels within the core, as such channels open up, we note that there are now only 12 such cases overall. We therefore do not find that PTV stations in this situation should have a priority merely based on the noncommercial nature of their operations, but rather believe that these limited situations should be dealt with on a case-by-case basis. While noncommercial operation is one of the factors that we will consider, we will also weigh other factors such as minimizing interference and/or significantly improving replication in making such decisions. On a case-by-case basis, we will also consider requests by stations with both NTSC and DTV channels outside the core area to defer the construction of their DTV station beyond the current construction deadline, or to convert their operations directly to DTV at the end of the transition, where such stations can show that implementing DTV in accordance with our schedule will cause undue hardship to their

[32] See Sixth Report and Order, at para. 34.

operations.

58. With regard to the issue of compensation, we continue to believe that this matter is best addressed in the context of future proceedings. The petitioners have presented no new information that persuades us that our decision to address this matter separately was incorrect or that there is need to finalize compensation decisions now. Furthermore, as pointed out by the petitioners, the issue of compensation is complex and likely to involve special considerations, such as allocations for not-for-profit services such as public safety communications, where compensation might not be appropriate. To decide this matter on reconsideration without a complete and adequate record that includes comment from potential new users of the reallocated spectrum would be inappropriate.

D. DTV Power

59. In the Sixth Report and Order, we allotted DTV channels using a "service replication/maximization" concept that was suggested by a variety of broadcast industry interests and representatives.[33] Under this approach,, we specified for each DTV allotment a maximum permissible effective radiated power (ERP) and antenna height above average terrain (HAAT) that will, to the extent possible, provide for replication of the station's existing Grade B service area.[34] The antenna HAAT specified for each DTV allotment was the same as antenna HAAT of its associated NTSC station. The ERP specified was the value calculated to provide service replication. We recognized, however, that the service replication approach originally proposed by the broadcast community could lead to increased disparities among stations. Therefore, in considering the DTV power issue, we stated that it is important to adopt an approach that provides for a high degree of service replication by all stations, while at the same time ensures that all stations are able to provide DTV service competitively within their respective markets. To this end, we adopted elements of a compromise plan set forth in the reply comments of AAPTS, the Broadcasters Caucus and others. In particular, we developed the DTV Table based on providing all new DTV allotments with a minimum of 50 kW and no more than a

[33] For example, this approach was suggested by the Commission's Advisory Committee on Advanced Television Service (Advisory Committee), the Broadcast Caucus, the Association of Maximum Service Television, Inc. (MSTV), the National Association of Broadcasters (NAB) and others.

[34] The methodology used to calculate NTSC service areas was based on studies and methodologies developed by the broadcast industry and our Advisory Committee. This methodology is described below in the discussion of our DTV allotment methodology. See Final Report and Recommendation of the Advisory Committee on Advanced Television Service, November 28, 1995. As discussed in the Fifth Report and Order, broadcasters will be allowed to begin DTV operations at power levels less than those needed for achieving full service area replication. That is, broadcasters will be allowed to operate at power levels lower than those specified for their operation in the DTV Table. This will afford them an opportunity to increase their power over time and thereby "grow into" the power level needed for full service area replication, as specified in the DTV Table. See Fifth Report and Order, at para. 91.